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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/647,130

08/22/2003

Axel Tillmann

22623

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535

7590

10/01/2004

THE FIRM OF KARL F ROSS

5676 RIVERDALE AVENUE

PO BOX 900

RIVERDALE (BRONX), NY 10471-0900

EXAMINER

TERESINSKI, JOHN

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/647,130

Applicant(s)

TILLMANN ET AL.

Examiner

John Teresinski

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 9-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/9/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,654,598 to Arulanandan et al..

Regarding claim 1, Arulanandan et al. disclose an electrode body (30) formed with two electrically separate surfaces (33, 35) positioned to contact simultaneously a sample (abstract), a electrical excitation source connected to one of said surfaces for feeding an electrical excitation signal to said sample (Fig. 4, element 36) and an electrical potential measuring unit connected to the other of said surfaces for measuring an electrical potential in said sample resulting from application of said electrical excitation signal to said sample (column 10 lines 61-68).

Regarding claim 3, Arulanandan et al. disclose two electrically separate surfaces separated by an annular insulator (column 9 lines 15-20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arulanandan et al. in view of U.S. Patent No. 5,574,371 to Tabanou et al..

Regarding claim 2, Arulanandan et al. does not disclose the area of said other of said surfaces for measuring said electrical potential in said sample is smaller by a factor of at least 10 than the area of said one of said surfaces for feeding said electrical excitation signal to said sample. Tabanou et al. disclose an elongated resistivity-sensing probe with two electrically separate surfaces (32, 34) with one surface smaller by a factor of at least 10 than the area of said one of said surfaces (Fig. 9 elements 32, 34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include one surface smaller by a factor of at least 10 than the area of said one of said surfaces as taught by Tabanou et al. into Arulanandan et al. for the purpose of concentrating current flow to a specific location such as the tip of the probe for current measurement (column 11 lines 30-35).

Regarding claim 4, Arulanandan et al. does not disclose surfaces for measuring an electrical potential in said sample is formed upon a pointed tip of said body adapted to be driven into said sample. Tabanou et al. disclose a surface for measuring an electrical potential in said sample is formed upon a pointed tip of said body adapted to be driven into said sample (column 11 lines 30-35, Fig. 9 element 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include surfaces for measuring an electrical potential in said sample is formed upon a pointed tip of said body adapted to be driven into said sample as taught by Tabanou et al. into Arulanandan et al. for the purpose of obtaining measurements at a desired location.

Regarding claim 5, Arulanandan et al. disclose one of said surfaces is a jacket of said body (35).

Regarding claim 6, Arulanandan et al. disclose the body as a spike adapted to be driven into the ground (Fig. 1).

Regarding claim 7, Arulanandan et al. disclose tip of said spike is a solid metal tip (column 9 lines 7-10).

Regarding claim 8, Arulanandan et al. disclose jacket is a metal tube/ring (abstract).

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arulanandan et al..

Regarding claims 15 and 16, Arulanandan et al. discloses the claimed invention except for two electrode bodies/a plurality of electrode spikes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the number of electrode bodies/spikes for the purpose of characterizing larger sample areas and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

#### ***Allowable Subject Matter***

Claims 9-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

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Regarding claim 9:

The primary reason for the allowance of claim 1 is the inclusion of the tip of said spike is composed a more noble metal than said jacket. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 10-14 are allowed due to their dependency on claim 9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following is cited to further show the state of the art with respect to methods and devices for measuring potential in samples:

U.S. Patent No. 6,002,257 to Thomas et al. disclose a method and apparatus for navigating a borehole.

U.S. Patent No. 4,219,776 to Arulanandan et al. disclose a method and apparatus for measuring density and fabric of soils.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Teresinski whose telephone number is (571) 272-2235. The examiner can normally be reached on M-F 8:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JT  
JT

September 27, 2004



**N. Le**  
**Supervisory Patent Examiner**  
**Technology Center 2800**